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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/671,128

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EXAMINER

BILGRAMI, ASGHAR H

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/671,128	Applicant(s) WISE ET AL.	
	Examiner ASGHAR BILGRAMI	Art Unit 2443	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/22/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

2. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

3. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1 & 10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Applications No. 10/671,203 and claim 1 of copending Applications No.10/671,204. Although the conflicting claims are not identical, they are not patentably distinct from each other because.

5. As to claim 1, claim 1 of the co-pending application (10/671,204) show a method, comprising: providing a link transmitter having a plurality of logical channels (claim 1); providing a link receiver coupled to the link transmitter; the link receiver providing a plurality of data credits to the link transmitter (claim 1); the link transmitter transmitting a packet to the link receiver, wherein the link transmitter takes the packet from one of the plurality of logical channels, and wherein the link transmitter selects from which of the plurality of logical channels to draw the packet (claim 1); diminishing the plurality of data credits as the packet is transmitted (claim 1); the link receiver storing the packet in a plurality of receiver buffers (claim 1); the link receiver updating the plurality of data credits (claim 1); and the link transmitter allocating the plurality of data credits among the plurality of logical channels (claim 1)

6. For the similar claim language claim 1 of copending application 10/671,203 is also not patentably distinct from claim 1 of this application.

7. As to claim 10, claim 1 the co-pending application (10/671,204) show a method comprising: the link receiver providing a plurality of data credits to a link transmitter (claim 1); the link transmitter transmitting a packet to the link receiver, wherein the link transmitter takes the packet from one of the plurality of logical channels, and wherein the link transmitter selects from which of the plurality of logical channels to draw the packet (claim 1); diminishing the plurality of data credits as the packet is transmitted (claim 1); and the link receiver transmitting a flow control packet to the link transmitter to add additional data credits to the plurality of data credits (claim 1), wherein the link transmitter selects to which of the plurality of logical channels to allocate the additional data credits (claim 1).

8. For the similar claim language claim 1 of copending application 10/671,203 is also not patentably distinct from claim 10 of this application.

9. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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10. Applicant has acknowledged nonstatutory double patenting rejection in the response dated 10/8/2009 and has elected to defer responding to the rejection until copending application Nos. 10/671204 and 10/671204 are patented.

Claim Rejections - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. Claim 19 is rejected under 35 U.S.C. 101 because the claim is directed towards a computer readable not being embodied on non-transitory medium, which is broad enough to be interpreted as a signal.

Examiner has shown one way to overcome this rejection.

Claim 19: A **non-transitory** computer-readable medium containing instructions

In the Specification: Amend the specification to include the term “**non-transitory** computer-readable medium” to avoid potential objection to the specification for lack of antecedent basis for claim terminology.

13. Dependent claims 20-27 are also rejected under 35 U.S.C. 101 by virtue of their dependence on claim 19.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 1-28 rejected under 35 U.S.C. 102 (e) as being anticipated by Bloch et al (U.S. 6,922,408 B2).

16. As per claim 1 Bloch disclosed a method, comprising: providing a link transmitter having a plurality of logical channels(col.2, lines 24-28); providing a link receiver coupled to the link transmitter (col.2,lines 40-53); the link transmitter having free buffer pool having empty receiver buffers (col.3, lines 49-53); the link receiver providing a plurality of data credits to the link transmitter(col.3, lines 58-64); the link transmitter transmitting a packet to the link receiver, wherein the link transmitter takes the packet from one of the plurality of logical channels, and wherein the link transmitter selects from which of the plurality of logical channels to draw the packet (col.4, lines 58-67); diminishing the plurality of data credits as the packet is transmitted; the link receiver

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storing the packet in a plurality of receiver buffers (col.8, lines 13-51); transmitting the packet out of the plurality of receiver buffers at the link receiver (col.3, lines 40-49); placing the plurality of receiver buffers into the free buffer pool as the packet is transmitting out of the plurality of buffers (col.3, lines 49-53). the link receiver updating the plurality of data credits; and the link transmitter allocating the plurality of data credits among the plurality of logical channels (col.2, lines 1-23).

17. As per claims 2, 3, 13 & 22 Bloch disclosed the method of claim 10, wherein transmitting a flow control packet comprises notifying the link transmitter of an empty portion of a plurality of receiver buffers (col.1, lines 40-47).

18. As per claim 4 Bloch disclosed the method of claim 1, wherein updating the plurality of data credits comprises adding additional data credits to the plurality of data credits, and wherein the link transmitter selects to which of the plurality of logical channels to allocate the additional data credits (col.2, lines 53-67, col.3, lines 1-3 & col.26, lines 38-54).

19. As per claims 5, 11 & 20 Bloch disclosed the method of claim 4, further comprising if the plurality of data credits are diminished before receiving the additional data credits, the link transmitter ceasing transmitting to the link receiver (col.7, lines 15-25).

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20. As per claims 6, 12 & 21 Bloch disclosed the method of claim 5, further comprising wherein if the link transmitter has ceased transmitting, the link transmitter resuming transmission upon receiving the additional data credits (col.7, lines 15-25).

21. As per claims 7, 14 & 23 Bloch disclosed the method of claim 1, wherein the plurality of logical channels are a plurality of virtual lanes (col.1, lines 40-47).

22. As per claims 8, 15 & 24 Bloch disclosed the method of claim 1, wherein the link receiver providing the plurality of data credits comprises the link receiver providing the plurality of data credits at initialization of a switch fabric network (col.2, lines 1-23).

23. As per claims 9, 16 & 25 Bloch disclosed the method of claim 8, wherein the switch fabric networks is one of an Infiniband network and a Serial RapidIO network (col.2, lines 1-23).

24. As per claim 10 & 19 Bloch disclosed a method comprising: the link receiver providing a plurality of data credits to a link transmitter, the link receiver having a free buffer pool having empty receiver buffers (col.3, lines 49-53); the link transmitter transmitting a packet to the link receiver, wherein the link transmitter takes the packet from one of the plurality of logical channels, and wherein the link transmitter selects from which of the plurality of logical channels to draw the packet (col.2, lines 1-23); diminishing the plurality of data credits as the packet is transmitted (col.8, lines 13-51);

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and the link receiver storing the packet in a plurality of receiver buffers (col.2, lines 14-23); transmitting the packet out of the plurality of receiver buffers at the link receiver (col.3, lines 40-49); placing the plurality of receiver buffers into the free buffer pool as the packet is transmitting out of the plurality of receiver buffers (col.3, lines 49-53); the link receiver transmitting a flow control packet to the link transmitter to add additional data credits to the plurality of data credits, wherein the link transmitter selects to which of the plurality of logical channels to allocate the additional data credits (col.1, lines 40-47).

25. As per claims 17 & 26 Bloch disclosed the method of claim 10, wherein one of the plurality of data credits represents one of the plurality of receiver buffers being ready to receive data (col.2, lines 1-23 & col.4, lines 58-67).

26. As per claims 18 & 27 Bloch disclosed the method of claim 10, wherein one of the plurality of data credits corresponds to one of the plurality of receiver buffers being empty (col.2, lines 1-23 & col.4, lines 58-67).

27. As per claim 28 Block disclosed the method of claim 1, wherein said transmitting the packet to the link receiver further comprises selecting the logical channel from the plurality of logical channels based on traffic conditions of the plurality of logical channels (col.2, lines 40-53) .

Response to Arguments

28. Applicant's arguments filed 10/8/2009 have been fully considered but they are not persuasive.

29. Applicant on page 11, argued that claim language disclose placing plurality of receiver buffers into a free buffer pool as the packet is transmitting out of the receiver buffers whereas Bloch discloses returning credits to a "pool of credits".

As to applicant's above argument examiner points out that applicant is using hindsight to present this argument which is related to buffer pool and credit pool when in fact they are relate to each other. Examiner directs applicant's attention to their own dependent claim 3 which explains such relationship "updating the plurality of data credits comprises notifying the link transmitter of an empty portion of the plurality of receiver buffers".

Numbers of available credits signify availability of free buffers. This is the reason why as soon as the packet is transmitted the credit(s) are relinquished back to a pool that indicates that buffer (s) is free (I.E available to accept another packet so that it can be transmitted to its appropriate destination).

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30. Finally, examiner again advises the applicant to narrow the independent claim language which differs from the applications cited in the double patenting rejection above to further the prosecution of this case.

Conclusion

31. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

32. Crawford et al (U.S. 5,918,055) disclosed Apparatus and method for managing digital resources by passing digital resource tokens between queues.

33. Papadopoulos et al (U.S. 5,430,850) disclosed data processing system with synchronization coprocessor for multiple threads.

34. Aubert et al (U.S. 6,388,922 B2) disclosed flow control technique for traffic in high speed packet switching network.

35. Susnow et al (U.S. 7,190,667 B2) disclosed link level packet flow control.

36. Schober et al (U.S. Pub. No. 2004/0223454 A1) disclosed method and system for maintaining TBS consistency between a flow control unit and central arbiter in an interconnect device.

37. Martin et al (U.S. 7,301,898 B1) disclosed credit sharing for fibre channel links with multiple virtual channels.

38. Forin (U.S. 6,594,701 B1) disclosed credit-based methods and systems for controlling data flow between a sender and a receiver with reduced copying of data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASGHAR BILGRAMI whose telephone number is (571)272-3907. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia L.M. Dollinger can be reached on 571-272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. B./
Examiner, Art Unit 2443

/Tonia LM Dollinger/
Supervisory Patent Examiner, Art Unit 2443